Reflections about the Implementation of the Processes Management Principles in Cuban's Construction Companies

Liber Galbán Rodriguez

Hydraulic Engineering Department, Constructions Faculty, Universidad de Oriente, Santiago de Cuba city, Cuba
liberg@fco.uo.edu.cu

Abstract

Current management of construction projects, regardless of their individual characteristics, is heading decidedly to process-based schemes. These issues should be well studied and therefore analyzed by the design team and project control. Moreover, there are designer or projects construction companies that have yet to implement efficiently the principles of the process approach, thereby excluding them from management efficient technical service quality, an issue that directly affects the construction processes and building of new infrastructure. This time it takes to revision of this situation in the organizations responsible of the design and execution of civil engineering projects in Cuba, so that reflection serves to enhance the implementation of the approach to process management in their daily activities, an important aspect to demonstrate competitiveness, efficiency and quality in the domestic and international markets.

Keywords

Cuba; Project; Civil Engineering; Process; Management; Design; Quality; Construction

Introduction

The man from ancient times has been developing ideas for improving civil engineering projects. Today there is sophisticated software to support for these purposes, however, to make appropriate design of projects, essential basic knowledge is needed to allow then control the execution of the work designed in real time. These skills are reduced to following aspects:

1. Basic knowledge of organization works and methodologies for implementation.
2. Abilities for using the software for such purposes.

These are current premises, however, surprising to find that even many engineers with technical scientific advances and the rapid development of information technology, still prefer to make these designs on their desks obviating the use of computers. Although it may seem outdated way of doing things, is precisely that where the best ideas come: Designing civil engineering project relies heavily on basic algorithms recreated by man in his mind, hence the urgent need to overcome every day on issues related to project design environments increasingly safe, efficient and effective.

A civil engineering project, defines as a group of documents in whish is determine the configuration of a constructive investment, then justifying the proposed solutions in accordance with applicable technical regulations. Hence, for a correct design of these documents containing orders, plans, algorithms, etc., It is best to use a methodology that ensures that the process finally after execution of the work, have success and examinations necessary.

The current management of international construction projects, regardless of their individual characteristics, is moving steadily towards process-based schemes, as in the rest of the industry and services. These processes are not always well defined; necessarily go through the implementation of quality systems and their far more classical definition (quality control, quality assurance) and involving the full set of activities to develop. Such issues should be well studied and therefore analyzed by the project design team. That is, the current management of civil engineering projects is headed for process management.

Cuban construction companies and the projects that they design and implement are not immune to this phenomenon, which is why it is necessary an analysis of this issue in the country.

Process Management

A late of the eighties of last century, and derived from the need to increase the quality of economic and productive processes of enterprises in the developed capitalist world, there is a new management tool,

which initially was called or process management process approach, this tool, in the year 1994 was adopted by the ISO as a standard for improving quality management, ISO 9001. Since its emergence has had several subsequent versions in 1998, 2000, 2001, 2003 and most recently in 2008.

Process management can be conceptualized as how to manage the entire organization based on the processes, these being defined as a sequence of activities to create added value on an entry to get a result and an output which in turn satisfies customer requirements.

The process approach is based on:

- The structuring of the organization based on customer-facing processes.
- The change of the organizational structure from hierarchical to flat.
- Functional departments lose their raison and are multidisciplinary groups working on the process.
- Managers and supervisors fail to act and behave like cowards.
- Employees focus more on the needs of their customers and less on standards set by his boss.
- Using technology to eliminate activities that do not add value.

The process approach requires a logistical support, which enables the management of the organization from the study of the flow of materials and associated information flow from suppliers to customers. The customer orientation, or provide the service or product for a given level of satisfaction of the needs and requirements of customers, represents the fundamental gauge of corporate profits, thus obtaining an efficient supply management and timely response to the planning process. [3]

Companies and organizations are as efficient as are their processes, most of which have become aware of what was previously stated, have reacted to the inefficiency representing departmental organizations, with their niches of power and excessive inertia to change, promoting the concept of the process with a common focus and working with an objective view on the client. [4] The main advantages of this approach are:

- Align organizational objectives with the expectations and needs of customers
- Shows how to create value in the organization and
- Points out how they are structured flows of information and materials
- Indicates how actually does the work and how to articulate the customer supplier relationships between functions.

The process approach is currently applied in conjunction with the theory Denim Cycle [5,] which in principle suggests that the quality management processes generated by an activity must be cyclical and is in line with four stages: Plan, Do, Check and act. This means that an organization should always be improving corporate acting or correcting previously planned and done to improve it or what is the same as continually improving the management of the company, also allowing the products or services in the process of exploitation and consumption, become real laboratories that process.

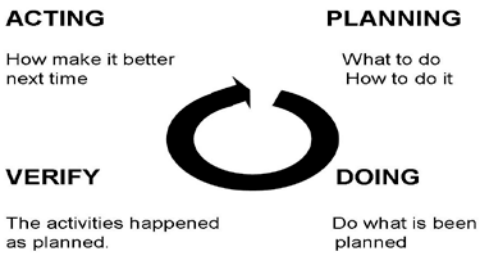

FIG. 1 DENIM CYCLE

For the implementation of process management approach to an organization, it is essential among other things, create the necessary cognitive and technological conditions. Many companies take years to implement it in its entirety, and its implementation, first requires a thorough investigation of the behavior of all components of the organization in all its facets, or must do science. It also requires a strategy in the medium and long term. The most common is to be introduced in stages or subsystems, for example, sub-economic management, human resources, design, general services, production, etc,.

Attached to this is to identify an approach is also used certification of compliance with its requirements. This certification is done internationally by the ISO, which assigns a panel of arbitrators or advisers, who are responsible in different countries to carry out the audit inspection process and, finally, after verifying in practice correspondence, from the extension of the certificate of quality compliance with ISO 9001 in the subsystem inspected. This certificate has an important significance, as it proves to other organizations or outside this sector, and society in general, the activity, product or service they perform, comply with all

requirements necessary for the purpose with which designed and with high quality, that also increase the prestige of the organization to the international community.

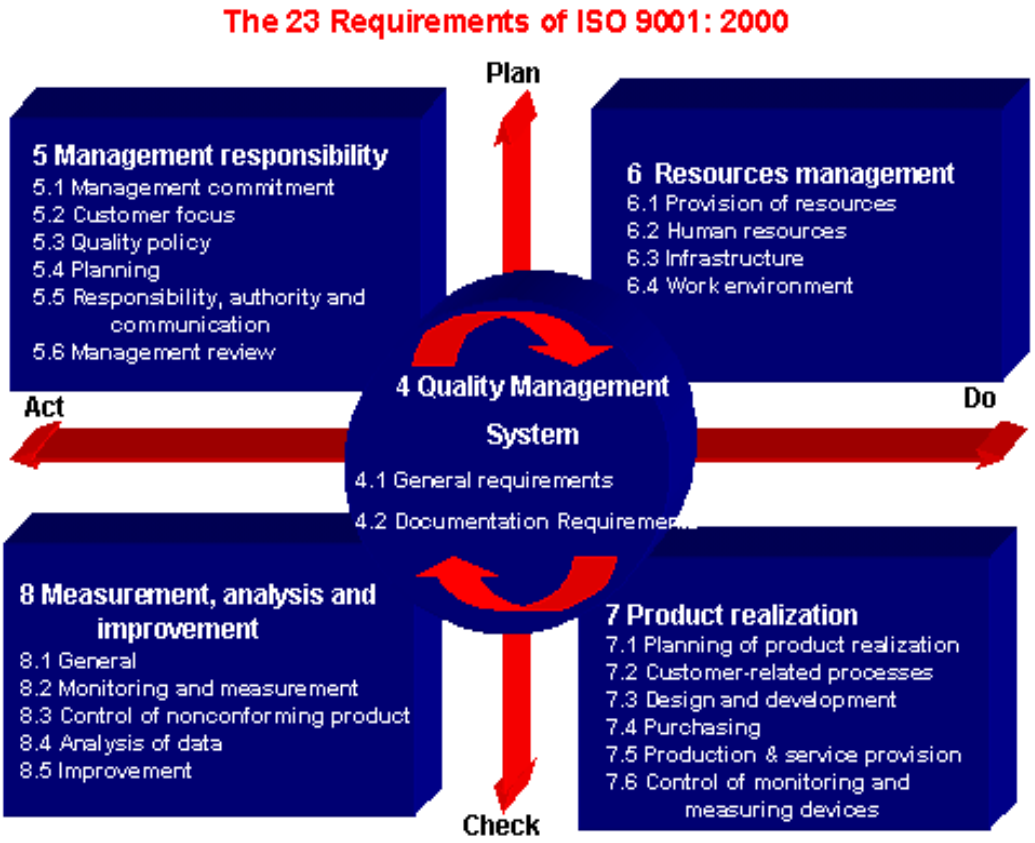

FIG. 2 REQUIREMENTS OF ISO 9001/2000

It should be noted that under the principle of managing processes in the world have been many working tools in various areas of human development, so much so that several of the ISO standards that emerged later, are also developed in the environment processes.

Perhaps the three most significant groups of processes for the customer are those relating to the economic control of the project (quantitative control), those that affect the quality of the product will receive (quality control) and, finally, the fulfillment of milestones in execution (control limits). The processes listed above, are supported by others who have most influence on those who carry out the project, such as the administration itself, the implementation of the various fractions of the project, etc.

The whole process generates a significant amount of documentation that must be preserved, distributed and evaluated. Contrary to the widespread view, this documentation should not have a volume greater than if quality systems are applied to production.

The Analysis of the Situation In Cuba

The transfers of technologies in business management to the developing countries, the analysis suggests the technological, environmental conditions, social and economic conditions of each country. International experience has recognized developer's progress in implementing process management.

Current management of construction projects, regardless of their individual characteristics, is moving steadily towards process-based schemes, as in the rest of the industry and services. These processes are not always well defined; necessarily go through the implementation of quality systems and their far more classical definition (quality control, quality assurance) and involving the full set of activities to develop. However, for the client of a construction project, there are certain processes that are more significant, in that they affect their own effectiveness as a manager, than others, which nevertheless still important in the entire business.

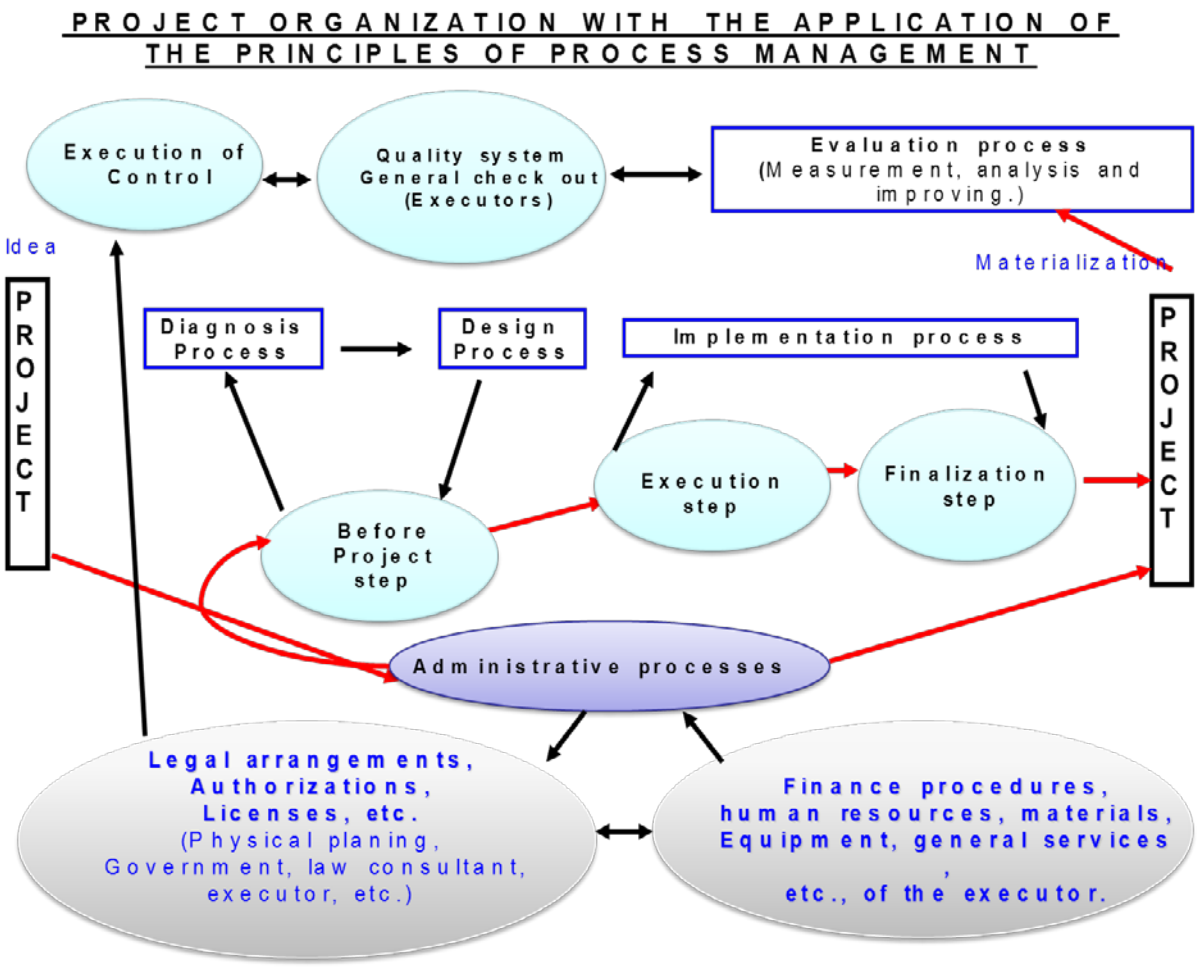

FIG. 3 PROCESS MANAGEMENT IN CONSTRUCTION PROJECTS

The design of a civil engineering project on the basics of process management is not in contradiction with the desires and objectives of the regulations in force in most Cuban companies, in fact in several construction organizations have introduced some elements of this way of managing the company and its activities, the problem is that according to the analysis performed, there is no single technological model that meets the requirements necessary to standardize and unify allow quality criteria as the management of project targets and standards follow international standards for these issues since he conceived the project through to completion. All this depends on the intrinsic characteristics of each organization.

The situation of Cuban construction companies is quite complex in relation to the application of the principles of process management to their projects. Among them are leading the company s s designers projects, several of which have been certified either their s services under s ISO standard 9001/200 8, ISO 1400/2004 and ISO 18/2005, something that is a major step forward in the effective implementation of this new way of managing projects.

Companies implementing projects that are ultimately designed materialize the project, regardless of their differences in technology, today presented other subjective conditions that prevent them from effectively implementing this way of managing their work, including the lack of preparation their managers and specialists, besides existing deficiencies in technological discipline that must be followed when implementing the various projects; aspects widely addressed by different specialists in the field in Cuba.

From the above aspects can infer that there are deficiencies in the final quality of the works and therefore in the management process is performed, also evidenced in aspects scams UL 30.

This analysis clearly shows that there are key issues that must be carefully observed by these specialists and decision makers, to be met during the investment process, including:

- The analysis of the social reality of the environment in which they move, their internal conditions and potential for integration.
- L Analysis of type of work and their characteristics.
- The current policy and legal regulations in the country constructively.
- The international legal and policy regulations current constructive area marked by Cuba.
- The appropriate choice of professional software for the design and execution of works, objects and elements works.
- The proper domain of process management principles.

L Implementing process approach is also being affected by the lack of economic resources, and in many cases their lack of professional preparation in the field of new software used for such purposes. Ation Manifest common in underdeveloped countries companies. This situation s precludes an efficient management of the quality of its services, an issue that directly affects the construction processes and building new infrastructure.

All these elements indicate the approach of a challenge: the challenge of implementing the conditions under soci ales, country's political and economic principles established in the design process management and execution of civil engineering projects. This is the best way to increase the quality of their products and services and achieve greater recognition, both domestically and internationally.

Conclusions

- Current management of construction projects, is moving steadily towards the process approach, which requires a logistical support, which enables the management of the organization from the study of the flow of materials and associated information flow from the suppliers to customers.
- The Cuban experience developers acknowledged progress, but there are difficulties in implementing tangible process approach to the projects developed by the construction companies in the country.
- There is the challenge of achieving management thus implement the design and execution of civil engineering projects under social, economic and political conditions of Cuba.

REFERENCES

Balbón Soto, Ma; Fernandez Barrios, Mn. 2006. Knowledge Management. Part II. Process management model. Acimed, 14 (1). http://bvs.sld.cu/revistas/aci/vol14_3_06/aci05306.htm.

BUREAU VERITAS, PETEIRO. 2005. "The Traditional Management and Process Management: Production, Processes and Operations." http://www.gestiopolis.com/recursos4/archivo/deger/gestitra.zip.

GROUP OF AUTHORS, 2005. "Business Excellence, Why Process Management", Spain. http://web.jet.es/amozarrain/index.html .

GALBÁN RODRIGUEZ, LIBER. 2009. Model for Geological Risk Management in the Construction Processes and Infrastructure. Rev. *Public Works.* May 2009, No.3499. ISSN 0034-8619, Spain.

MY DIKDAN JAUA. 2003. "Model of Quality Assurance in the Design and Construction of Massive Developments of Social Housing." VII Latin American Congress of Pathology and IXth Construction Quality Control in Construction. CONPAT 2003, Vol I: Quality Control, ISBN 968-464-133-8, Merida, Yucatan, Mexico.

MENDIOROZ JAUGE, RICARDO et al. 2008 "Comprehensive Management of Work", III Andalusian Congress Road. Spain. 2003. Retrieved Electronically on Territorial Center of Information Management of Construction Ministry, Santiago de Cuba.

MONGE GRANADOS, HERNANDO. 2003. "Building Multinational Infrastructure Projects in Central America and Its Impact on the Generation Of Risks." Costa Rica. Retrieved Electronically on Territorial Center of Information Management of Construction Ministry, Santiago de Cuba.

NEGRIN, ERNESTO. "Methodology for the Improvement of Processes in Business Hotel", 2006. http://www.monografias.com/trabajos10/hotel/hotel.shtml.

RESOLUTION 91/2006, "Notes on the Investment Process", Ministry of Economy and Planning, Cuba. Obtained in Electronic Format.

Rule ISO 9001:2000

Rule ISO 9001:2008

Rule ISO 14000:2004

Rule ISO 18000:2005

SOPEÑA MAÑAS, LUIS. 2006 "Pathology and Underpinning of Foundations. Paper at the Conference on Foundations in the Technical Building Code. CEDEX. Spain.

BUSINESS EXCELLENCE, Why Process Management, Obtained in Electronic Form. http://web.jet.es/amozarrain/index.html. ISO 9001/2008.